

Patent Claims:

5 1. A method for the production of fire protection glazing, consisting of at least two flat substrates and one fire protection means, whereby the fire protection means consists of at least one film or of a film system having at least one intumescent layer, and the fire protection means is introduced between the substrates, characterized by the following steps:

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— applying several film sections of the fire protection means onto a first substrate, whereby the film sections cover the entire surface of the substrate that is to be provided with the fire protection means,

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— applying a second substrate onto the first substrate with the film sections,

— carrying out a laminating process at elevated pressure and elevated temperature.

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2. The method according to Claim 1, characterized in that more than two substrates are made into fire protection glazing.

3. The method according to one or both of Claims 1 and 2, characterized in that the edges of the film sections abut each other and/or overlap slightly after being applied onto the first substrate.

5 4. The method according to one or more of the preceding claims, characterized in that the substrates and the film sections are laid on top of each other in the desired layer structure in a laminator and then evacuated, after which the system is charged with atmospheric pressure under elevated temperature in order to create a pre-laminate.

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5. The method according to one or more of the preceding claims, characterized in that the film sections are affixed onto the first and/or second substrate.

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6. The method according to Claim 5, characterized in that the film sections are glued to the first and/or second substrate.

7. The method according to Claim 6, characterized in that water-soluble organic binder is used for the adhesion process.

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8. The method according to Claim 7, characterized in that polyvinyl alcohols, cellulose derivatives, alcohols and/or polyalcohols are used for the adhesion process.

9. The method according to Claim 6, characterized in that inorganic binders are used for the adhesion process.

10. The method according to Claim 9, characterized in that wetting agents 5 having different moduli and degrees of dilution, silicic sols and/or water are used for the adhesion process.

11. The method according to Claim 6, characterized in that glycerin or water or mixtures thereof are used as the adhesive.

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12. The method according to Claim 11, characterized in that the mixing ratio of glycerin to water is in the order of magnitude of 85% glycerin to 15% water.

13. The method according to one or more of the preceding claims, 15 characterized in that additional functional layers are introduced between the first substrate and the second substrate.

14. The method according to one or more of the preceding claims, characterized in that the pressure during the laminating process is in the order of magnitude of 1 to 10 bar.

20 15. The method according to Claim 14, characterized in that the pressure during the laminating process is in the order of magnitude of 1 to 2 bar.

16. The method according to one or more of the preceding claims, characterized in that the temperature during the laminating process lies within the thermoplastic range of the fire protection means and below the foaming temperature of the fire protection means.

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17. The method according to Claim 16, characterized in that the temperature during the laminating process lies 10°C to 20°C [18°F to 36°F] below the foaming temperature of the fire protection means.

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18. The method according to one or more of the preceding claims, characterized in that the temperature during the laminating process is at least 70°C [158°F].

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19. The method according to one or more of the preceding claims, characterized in that the temperature during the laminating process is at least 80°C [176°F].

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20. The method according to one or more of the preceding claims, characterized in that the temperature during the laminating process is at the maximum 100°C [212°F].

21. The method according to one or more of Claims 1 to 19, characterized in that the temperature during the laminating process is at the maximum 150°C [302°F].

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22. The method according to one or more of the preceding claims, characterized in that the duration of the laminating process is in the order of magnitude of 3 to 6 hours.

5 23. The method according to Claim 22, characterized in that the duration of the laminating process is four hours.

10 24. The method according to Claim 23, characterized in that the execution of the laminating process is divided into a heating phase of about one hour, a retention phase of about two hours and a cooling phase of about one hour.

25. The method according to one or more of the preceding claims, characterized in that the dimensions of the substrate are in the order of magnitude of a width $W = 3.21$ meters and a length $L = 6.0$ meters.